

Title: Measuring Resilience to Monsoon Flooding Over Time: An Innovative Tool Approach

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I. Introduction:

Climate change is increasing risk worldwide: drought and precipitation changes are on the rise, the sea is rising and acidifying, and severe weather events are increasingly commonplace. Additional risk drivers, including high inequality, rapid unplanned urbanization, poor governance, and environmental degradation have collided with climate change impacts to escalate both vulnerability to natural disaster events and losses when they occur. Over the past two decades, natural disasters have affected an average of 220 million people annually and killed more than 1.3 million.¹ More than 90% of these fatalities occur in developing countries.² Economic losses are likewise staggering: in 2011 alone, disaster-related damages cost the global economy over \$380 billion.³ And, these trends are expected to increase in intensity and frequency over the coming decades, undermining efforts to reduce poverty and achieve sustainable development.⁴

Rising global disaster risk and exposure have renewed a sense of urgency among development and humanitarian organizations as well as inspired novel approaches to meet these challenges. Organizations across sectors came together at the recent World Humanitarian Summit in May 2016 to address this urgency, building on the path forward set forth in the Sendai Framework for Disaster Risk Reduction 2015-2030.⁵ There is growing recognition that disasters are not simply natural events, but rather are embedded in complex social, economic and ecological systems. Such systemic characteristics interact with the physical hazards themselves to produce and exacerbate differing degrees of vulnerability and risk among and within populations.⁶ The disaster risk reduction (DRR) policy community is now turning its focus away from physical processes and hazards *per se* and toward an integrated risk management approach that addresses the underlying factors that impact a community's ability to anticipate, respond to and recover from shocks.

Resilience concepts make an important contribution to advancing understanding in this area, while offering a key way to bridge the divide between global international

¹ UNDP, 2013.

² UNDP, 2014.

³ UNDP, 2013.

⁴ IPCC, 2013.

⁵ UNISDR, 2015.

⁶ Field, 2012; Cutter et al, 2008.

development and humanitarian response. Resilience thinking focuses on a system's ability to absorb, prepare for, and react to natural, economic and social shocks. Such theory recognizes that natural and social systems are inextricably linked, and that they are consistently changing and adapting to or learning from that change.⁷ Crises offer unique opportunities to apply resilience concepts in order to not only respond to the disaster itself, but also operationalize adaptive capacities and ensure communities are more resilient in the future. The Sendai Framework notes a global commitment to the dichotomy of simultaneously both "reducing existing risk and strengthening resilience," as well as shifting focus from disaster management to risk management.⁸

The concepts of DRR and resilience also feature prominently in the 2030 Agenda for Sustainable Development's Sustainable Development Goals (SDGs). Ten of the 17 SDGs and 25 associated sub-targets directly and indirectly relate to DRR, firmly establishing it as a core development strategy.⁹ Resilience is also acknowledged explicitly and implicitly throughout the 2030 Agenda.¹⁰ Building on the groundswell of the SDG's, the 2015 Paris Agreement for climate change also integrates resilience into its global goal for climate change adaptation, which focuses on "enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change".¹¹

While these concepts are firmly cemented in development and humanitarian agendas for the coming decades, the challenge remains as how best to operationalize and measure resilience. This is particularly challenging in short project timeframes, where resources and capacities for measurement are limited, and in difficult working environments.

The indicator-based tool described in this paper sets forth a solution to this challenge, currently being tested in the context of flood disaster risk in southern Nepal and north India.¹² Rising out of a long-term partnership between academic research institution Yale University and humanitarian practitioner Lutheran World Relief, this tool has an innovative methodology and development process. Following an introduction of the context and methodology, discussion of early results and demonstrated applicability, the paper outlines opportunities and challenges of using such methodology in the broader discourse on operationalizing resilience in disaster prone communities worldwide.

II. Context:

Approximately 90 percent of disasters occurring worldwide are water-related events, the most prominent of which are floods.¹³ In particular, communities throughout South Asia suffer widespread flooding each year during the. The monsoon cycle exhibits natural spatial and temporal variability inter-annually and intra-seasonally. Climate change

⁷ Nelson et al, 2007.

⁸ UNISDR, 2015.

⁹ UN, 2015.

¹⁰ Ibid.

¹¹ UNFCCC, 2015.

¹² In 2015, the Yale Himalaya Initiative (YHI) partnered with Lutheran World Relief (LWR) to develop and pilot an indicator-based tool for measuring the resilience of vulnerable communities to monsoon flooding in the Gandak and Koshi river basins in Nepal and India. This partnership is part of a two-year LWR-led project, which is implementing a cross-border early warning system and other interventions to enhance the resilience of target communities to monsoon impacts. The YHI-LWR collaboration provides a unique opportunity to pilot a resilience measurement tool in the context of an active project, taking into account dynamic feedbacks, unexpected challenges, and resource constraints.

¹³ World Bank, 2013.

further contributes to the variability of the monsoon rains through warming temperatures and modified precipitation patterns.¹⁴ The combination of both natural and anthropogenic factors contribute to increases in extreme weather events, potentially impacting millions of people living in the region. The latest Assessment Report from the Intergovernmental Panel on Climate Change determined that the increase in South Asian summer monsoon extremes will be the largest among all monsoon systems throughout the 21st century.¹⁵

In particular, the impact of changing monsoon rain intensity and frequency is felt in areas close to the Himalayan mountain range, where water drains quickly, reaching high volumes and velocities as it makes its way downstream. The communities living in the Terai region of Nepal and bordering portions of India are significantly impacted by these runoff trends. Changes in annual flooding increases in human and livestock casualties, compelled migration, and an overall deterioration of local health and livelihoods.¹⁶

Communities close to the border between India and Nepal are linked not only by geographic proximity, but also by a complex set of historical cultural and socio-economic factors and traditions. The relative remoteness of some such areas and the integrated social network provide a unique opportunity to develop a systematic approach to addressing flooding impacts at the ground level. LWR has strong ties to the area and has set up a system of interventions to alleviate flooding impacts. This includes early warning systems linking upstream (Nepal) and downstream (India) communities to share data, trainings on safety and preparedness, facilitated sharing of lessons learned, and assistance in building informal networks of support. The program is further supporting each village in establishing a Disaster Management Committee and Task Force, as well as grain banks and emergency funds. Program beneficiaries also receive some technical and financial training and livelihood support.

In order to develop a tool to track the efficacy of these interventions in progressively advancing community resilience to flooding events, the following guiding principles were developed:

- 1) ***How can an organization like LWR best assess the resiliency of communities to flood hazards over time?***
- 2) ***How can a tool that measures such resilience account for the tight budget and limited time of a smaller development or humanitarian organization?***

The tool developed seeks to address both questions to ensure that it is not only measuring resilience, but doing so in a dynamic, adaptable, and affordable manner. It seeks to inform how limited resources can most effectively be directed to reduce risk and enhance resilience to future flood events.

III. Literature Review:

The definition of 'resilience' varies widely across disciplines, presenting a challenge for establishing an agreed upon reference point and standard for measurement. For purposes of this research, the definition adhered to is that proposed by Folke, who defines resilience as the ability of systems to "absorb disturbance and re-organize while undergoing change so as to still retain essentially the same function, structure, identity

¹⁴ Goswami, 2006.

¹⁵ IPCC, 2013.

¹⁶ LWR, 2015.

and feedbacks”.¹⁷ Specifically, this study considers resilience to be the ability of flood-affected households and villages to maintain or to come back to their pre-monsoon flood status.

Despite a growing literature on resilience, researchers have yet to reach consensus on how to measure and operationalize it on the ground. The challenge of operationalizing resilience is rooted in the reality that socio-ecological systems are characterized by cross-scalar interactions, non-equilibrium dynamics, and the social influences of individuals with differing values, agendas and priorities. These characteristics are difficult to gauge and evaluate, and a resilience-building program must always reflect on the key questions of resilience to what, for what and for whom?¹⁸ Differing intellectual and practitioner perspectives result in varied responses to these questions and a range of approaches and frameworks for measurement.¹⁹

A few studies that have adopted a temporal element in their framework only measure two time points (before and after an intervention)²⁰ or rely on incomplete historical records.²¹ A recent review of 43 resilience frameworks found that many merely use the term “resilience” without any real engagement with resilience theory and systems concepts, and very few frameworks explore issues around politics and power.²²

The Sustainable Livelihoods Framework (SLF), developed by the UK Department for International Development (DFID), is one basis for measuring resilience, and one that provides a foundation for the methodology used in this study. The SLF presents five main assets that affect people’s livelihoods and the relationships that exist between these factors. The five assets are defined as follows:

- i. *Human Capital*: skills, knowledge, ability to labor and good health that enable people to pursue different livelihood strategies and achieve their objectives;
- ii. *Social Capital*: the networks and connectedness that facilitate trust and ability to work together, membership and formalized groups, and informal safety nets;
- iii. *Natural Capital*: natural resource stocks useful for livelihoods (land, biodiversity);
- iv. *Physical Capital*: basic infrastructure and producer goods necessary to support livelihoods; and
- v. *Financial Capital*: the financial resources that are used to achieve livelihood objectives.²³

Following the SLF’s release, a sixth “political” capital was added to account for political

¹⁷ Folke, 2006.

¹⁸ Carpenter et al., 2001.

¹⁹ For instance, Oxfam’s Multidimensional Approach for Measuring Resilience draws upon the characteristics approach pioneered by Twigg (2009), which hypothesizes that there are particular household features that determine coping ability and adaptive capacity. Oxfam puts forth a list of indicators across five interrelated dimensions of resilience: innovation potential; livelihood viability; contingency resources and support access; integrity of natural and built environment; and social and institutional capability. Composite indices for each indicator class, with each assigned a numerical threshold. The indices are differentially weighted, based on priorities identified by the researcher, and together yield a resilience score (Hughes and Bushell 2013). Other notable “characteristics-based” approaches to measuring resilience include the ACCRA framework, which determines resilience according to five characteristics of adaptive capacity (Jones et al., 2010); and Speranza et al. (2014) who identify key attributes of livelihood resilience.

²⁰ Elasha et al., 2005.

²¹ Brock, 1999; Baumann and Sinha, 2009.

²² Bahadur et al., 2015.

²³ DFID, 1999.

and institutional influence on resilience.²⁴ However, even with this addition, of the studies that have used a sustainable livelihoods-based indicator approach to measure resilience most have only represented a “snapshot” of vulnerability at a single time point.²⁵ This is a constraint for many resilience studies and the approach is limited in that it fails to reflect change over time or account for trends in seasonality. For example, Mayunga (2007) adopts a capital-based approach to understanding and measuring community disaster resilience that is based on summing the five types of capital to compute a mathematical resilience score. However, this approach (which remains in the theoretical phase) does not incorporate key resilience concepts, like how differing capitals interact and influence each other, and it fails to incorporate cross-scalar governance and dynamic change over time.²⁶

IV. Methods:

To address these shortcomings, the LWR-YHI tool presents a novel methodology for measuring resilience that captures seasonality, effects of interventions, political influences, and longer-term temporal trends, as measured at the household-scale. The tool is based on the foundation of the SLF for a number of reasons. First, it focuses on the interdependence of resources that have an influence on risk and wellbeing, and thus resiliency. It recognizes that assets are essential for coping with shocks and adapting, and that these assets interact with one another within the context of complex systems. In addition, the SLF is already a recognized and accepted model within the development community and, because every household has assets to build upon, it presents a common and practical starting point. A further utility of the framework is its applicability at different scales and in multiple contexts. The LWR-YHI tool examines the five forms of capital originally included in the SLF - social, financial, human, natural, and physical - as well as a sixth political capital.²⁷ In addition, the tool considers how each of these capitals is moderated through processes and institutions. The theoretical scope of this tool within the broader context of the SLF is illustrated in Figure 1 below.

The LWR-YHI approach to measuring resilience is designed specifically using the case study of the Himalaya region detailed above. It is intended to begin before a resilience-building intervention is deployed, and then be utilized both pre- and post-monsoon season during and after the tool’s release over a period of years. This method allows for the understanding of a baseline of existing coping capacity in the community and then measures resilience building in relation to that baseline not at just a single point, or “snapshot,” but rather over time. This dynamism allows the tool to not only measure the project interventions, but also to capture seasonal trends and the influence of other changing socioeconomic and political conditions on resilience.

²⁴ Baumann and Sinha, 2001.

²⁵ Motsholapheko et al., 2011.

²⁶ Bahadur et al., 2015.

²⁷ Baumann, 2000.

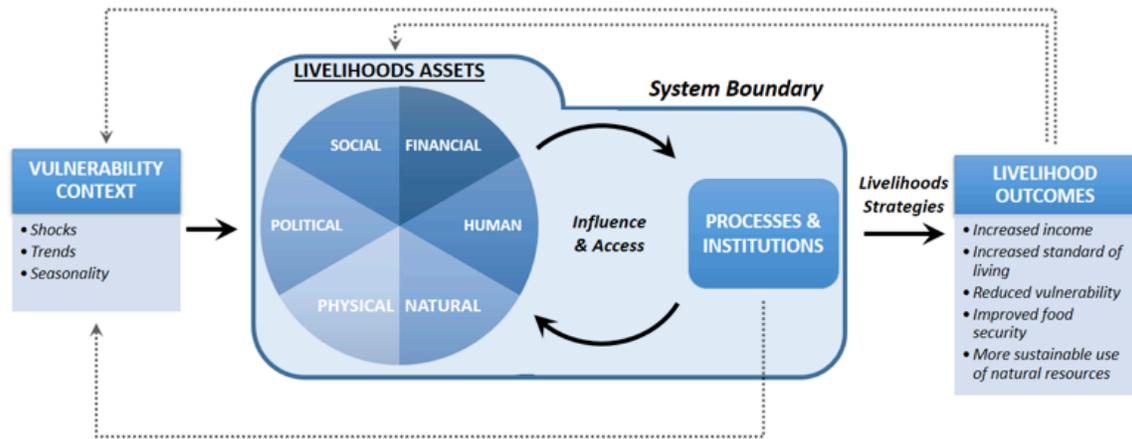


Figure 1: The theoretical scope of the YHI tool within the broader context of the Sustainable Livelihoods Framework.²⁸

The development of the tool began with a gap analysis and indicator identification process, followed by both focus group and household level surveys in four pilot communities.

Gap Analysis: The goal of developing the tool is to create a small but reflective set of key indicators that accurately capture all six asset classes, as well as processes and institutions, but are manageable within program time and resource constraints. The development of the tool began with an analysis of the existing indicators included within LWR’s internal project monitoring and evaluation framework. Since LWR was already planning to collect data on these indicators, it was efficient to incorporate them into the tool as applicable. Analysis first considered if a given indicator was relevant to the six SLF asset classes and/or to processes and institutions. If so, it was added to the tool; if not, a “gap” was identified and an additional indicator was created to gather the necessary information. This process resulted in a long list of indicators, which were subsequently distilled and consolidated in collaboration with LWR and partners in order to account for overlaps, feasibility, and appropriateness. The indicator list is continuing to be refined through an iterative process with each successive round of data collection.

Household Survey and Focus Group Discussions: The tool’s approach balances both quantitative and qualitative data collection methods, in recognition that some information on resilience requires an understanding of individual perceptions, priorities and values. To collect the indicator data, the YHI-LWR team designed household surveys and Focus Group Discussion (FGD) questionnaires. The questionnaires were translated and transferred to an electronic database using Google Open Data Kit, and were conducted by local enumerators using tablets. Data will be collected at four time points: pre- and post-monsoon in Year 1, and pre- and post-monsoon in Year 2. Round 1 data questions ask households to reflect on the historical impacts of monsoon floods from previous years, while Rounds 2, 3 and 4 ask about the impacts from the most recent monsoon season. At time of writing, the first three rounds of data collection had been completed. The timing of the data collections are as follows: Round 1: May 2015; Round 2: December 2015; Round 3: May 2016; Round 4: December 2016.

²⁸ Adapted from DFID, 1999. See also Baumann and Sinha, 2001.

Each Focus Group Discussion (FGD) consisted of 12-18 members of each village, with an effort to maintain representation across gender, class and caste. Ages ranged from 23-65 years old, and the participants represented a range of professions, though most were farmers – a common local livelihood. In addition, several participants were chosen because they also serve in positions on flood management or disaster management committees and can therefore reflect on progress in those areas. FGD participants responded to general questions about village conditions and seasonal trends that applied to all the households, as well as interpretive questions aimed at better understanding village dynamics, everyday challenges and perspectives on disaster risks and preparations.

Like all surveys, those used for this tool were constrained by a common critique – participants may not be entirely truthful in their responses and the presence of data collectors could influence the responses. To help mediate these impacts, local partners familiar with working in the villages informed participants about the intentions of the study and addressed their concerns before data collection began. All data collectors were from a local organization, spoke in local language and were familiar with the area.

Village Identification: The four pilot villages are located in the floodplain of the Gandak River Basin. They were chosen based on geography, location to the river, accessibility for data collectors, and similarity in population size. Two of the villages are in Nepal (Kudiya and Paklihawa) and two are in India (Kotraha and Shivpur). Two are upstream of the river and two are downstream, with one of each slightly closer to the river than its counterpart in the same country. In each village, 10% of the households were selected at random to participate in the survey, with 105 households participating in total.

Methodology for Analysis and Standardization: Once received, the household survey data and qualitative FGD data were coded and combined. The consolidated data were grouped according to their relevant capitals or processes and institutions and standardized. These indicators were then aggregated to derive a composite index indicating the resilience “score” of a particular community at a particular time.

Employing such a diverse range of indicators is inherently difficult, especially when comparing across different units (time, cattle units, hectares, rupees, etc.). Utilizing examples from a number of other studies²⁹, a standardization approach was developed - chosen because it lends itself more easily to comparison of households and communities within indicators, development of composite indices, and does not require *a priori* understanding of indicator results. Through this method, a simple 0 – 1 index is calculated for each indicator using the following formula:

$$\text{For household } h \text{ and value of indicator } i, \text{ Index} = \frac{i_h - i_{\text{minimum}}}{i_{\text{maximum}} - i_{\text{minimum}}}$$

After this index is calculated for each data point, a composite index can be developed either directly, by simply averaging all of household *h*'s values of *i* at time point *t*, or indirectly, by first calculating averages of indicator values *i* within each capital class, then calculating the total average of all six capital classes plus processes and institutions. The latter may be more appropriate, since the number of indicators included within each

²⁹ Motsholapheko et al., 2011; Pandey and Jha 2012.

kind of capital differs greatly, and it would allow the different classes to retain an equitable amount of influence on the overall composite index.

Once establishing a better understanding of the context of the Gandak River Basin and gathering data, a sensitivity analysis was performed using different weightings of classes and/or individual indicators to more appropriately gauge their contributions to the overall composite. To perform a village-level analysis, the averages of these values for all households within a given village were calculated. Regardless of how this composite index is determined, it is possible to track the index and the individual indicators across the time series to obtain dynamic measurements of impacts, resilience, and recovery using Euclidian distance between points.

V. Results:

Utilizing the methodology described above, the tool captured a number of shifts within and among the capital assets examined from Round 1 to Round 2. This shift is illustrated in Figure 2 below.³⁰

Though the tool has been effective in showing resilience changes, it is important to note that the pilot focus group study, while originally intended for four villages, only was conducted in two villages – one upstream from the river, and one down. As a result, only data from these two villages is discussed below and is utilized in the development of the model. At the household level, best efforts were made to survey the same households at each time point, but in some cases this was not possible and a neighboring house was surveyed instead.

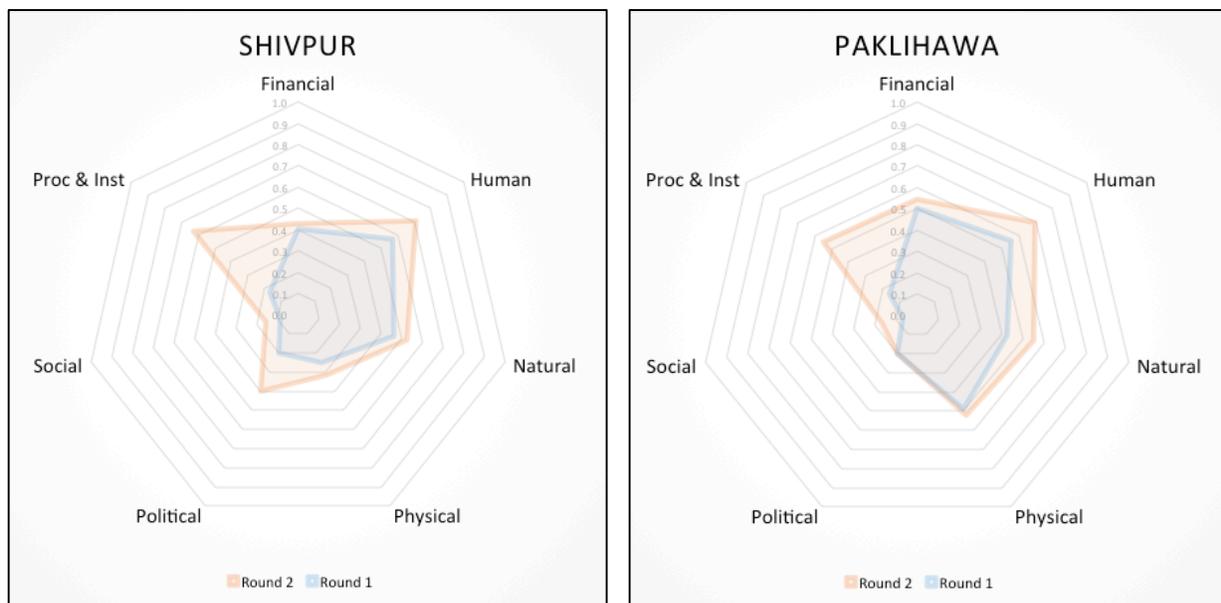


Figure 2: The charts above display how the resilience scores for each village shifted by capital from Round One (blue) to Round Two (orange).

³⁰ At the time of writing, data from the first two rounds (pre- and post-monsoon from 2015) had been analyzed and incorporated into the model, while data from Round 3 (pre-monsoon 2016) was collected, but not yet integrated. The data collection is ongoing.

As is illustrated above, significant capital shifts were seen in the Processes & Institutions category for both pilot villages, while Social and Financial capitals experienced negligible change. Indicators that made up each group will continue to be tracked, and researchers are working with LWR and the survey team to evaluate outliers and adjust accordingly.

The Processes & Institutions capital reflected the greatest change from Round 1 to Round 2. This shift is reflected in the outcomes of the LWR resilience-building interventions in the villages. For example, both villages reported having an early warning system and DRR institution in place in Round 2, neither of which they had in Round 1. They also reported that they received training on DRR and/or EWS, and that new cross-border citizen forums had been established, but neither village reported having an emergency plan in place. The number of days reportedly needed to prepare for a safe response to a flood event dropped in both villages. In Paklihawa, 12% of households reported having access to a grain bank, but none did in Shivpur. Also, virtually no households reported having access to an emergency fund. A major shift was reported in households who said they had previously heard early warning systems but ignored them; this number declined by 12% in Shivpur and by 41% in Paklihawa.

VI. Discussion:

The intent of the YHI/LWR tool is not to identify causation, but rather to capture changes in the six capitals over time as well as external interventions in the community and to identify how these trends might be impacting overall resilience. The tool as presented is flexible and adaptable to being deployed in an environment experiencing multiple shocks and changing dynamics.

For instance, Nepal and India experienced a number of significant shocks during the data collection period. On April 25, 2015, Nepal was hit by a 7.8 magnitude earthquake that devastated homes, roads and other infrastructure throughout the country and took nearly 9,000 lives. In addition, the country experienced a political crisis over the passage of a new constitution, a months-long blockade along the border with India and a subsequent fuel shortage. This resulted in some delays to data collection dates, and pushed back the implementation of program interventions.

Based on the results from Round 1 and Round 2 data collection, it appears resilience was strengthened in both villages. The tool successfully captured a baseline for bouncing back after a crisis, and the villages retained or exceeded that resilience threshold over time. This overall higher village scores suggest household trends are moving toward an increased ability to absorb, adapt and respond to shocks such as monsoon flooding.

However, not all capitals were strengthened equally; while Human capital and Processes & Institutions experienced large increases in their resilience scores, other capitals, like Financial and Physical, remained largely stagnant. These trends reflect project interventions during the time period; changing political, social and environmental conditions; and the fact the 2015 monsoon season was weaker compared to years past. FGD and household survey participants noted there was much less rain during the monsoon period than usual, none of the villages experienced a single significant flood event, less land was submerged, and the real challenge facing most households was drought.

The FGDs helped to illuminate interactions between the capitals and across governance scales. In Kudiya, Nepal, FGDs revealed that at least some family members do not evacuate to safe areas even during emergencies, due to fear that neighbors will steal their belongings; this reveals how Social capital (distrust of neighbors) can impact Human health (increasing the likelihood of flood-related death or injury). In Shivpur, FGD participants feel their local representative does not listen to their concerns and fails to share local flood related issues with those in upper levels of government office who might be able to provide support. This reveals a breakdown in political communication across governance scales, from the village level to the regional level and beyond. Political polarization at the international level (between India and Nepal) and the local scale (between neighboring villages) stymied efforts to advance cross-border citizen forums and meetings among neighboring villages that could have enhanced flood preparedness and response.

The tool revealed only minor changes in Physical capital, which may also be partly explained by the low score in Political capital. Both villages expressed concern at the poor quality of feeder roads and bridges, especially during the monsoon season, and the lack of maintenance. Political representatives do not meet with their villages and are not responsive to village concerns, and thus are not directing funds to critical infrastructure improvements. National government response was also perceived as weak at a national scale, as flood provisions and aid were largely viewed as delayed and/or insufficient. At the local scale, villages do not receive information on flooding from the local government but rather from the police.

There are also differing baseline conditions in each village, but because the tool only compares a village to itself over time, this does not affect the tool's capacity to show trends. For example, the health conditions of the Shivpur residents was weak compared to more moderate health standards in Paklihawa. This presents a possible connection between two or more of the capitals themselves; poor health may be related to weaknesses in Physical capital. Houses in general are perceived as less strong in Shivpur, the village has no electricity, and a higher percentage of households there must resort to open defecation due to a lack of alternative sanitation facilities. In contrast, over 75% of families have good access to electricity in Paklihawa.

As LWR increased its implementation of flood related DRR initiatives, a clear shift was seen in the Processes and Institutions score. Villages are becoming equipped with disaster response committees, are now trained in early warning systems, and are more knowledgeable about how to prepare for future monsoon floods. This training may have influenced the decline in the number of households who stated they would ignore an early warning if they heard it. It also likely led to the decrease in time needed for Disaster Response Teams to prepare for a safe response to a flood event. However, due to the weak monsoon season, these newly formed task forces and systems have yet to be put to the test.

In addition to showing shifts in the long term, the tool successfully captures seasonal trends. As explained during the FGDs, there are two growing seasons in Nepal and India; the first is from June to September and the second from November to April. Since the Round 2 data was collected in December, few households were earning an income from agriculture at the time and villages thus reported a decrease in agricultural income earners. Due to the delayed monsoon season, villages noted that seedbed preparation was delayed by 15-20 days, resulting in lower yields (as seen in Natural capital). With

repeated data collection periods, longer temporal trends due to climate change may be captured, as well.

As the tool demonstrates, financial capital is one area in which stronger project intervention may be needed, particularly in Shivpur. While membership in savings and credits groups increased in Shivpur, so did the number of households who reportedly wanted to borrow but could not, revealing an unmet need that may weaken households' ability to be resilient against future shocks. Villagers report that it is very difficult or impossible to get loans during an emergency, and Interest rates from private money lenders can range from a minimum of 60% (as reported in Paklihawa) to as much as 120% (Shivpur). In addition, while 20-30% of the population in each village is engaged in a life insurance scheme, villagers remain unaware about crop and livestock insurance. This points to an area for future education and support, as insurance can make households more resilient to agricultural losses and damages.

VII. Conclusions:

The tool and methodology as described have been successful in capturing change over time. Over the first two rounds of data collection, the influence of seasonal trends, political changes, project interventions, and monsoon impacts were reflected in the shifting resilience scores from each village. This suggests that the set of indicators selected is effective at measuring resilience over time. The next two rounds of data collection promise to bring further insights and useful adjustments as the methodology is continually improved.

In the near-term, data findings will be used to enhance LWR's understanding of village dynamics and decision-making, and how project interventions are interacting across capitals to enhance resilience. With additional data, it may help to identify those capitals that have the greatest influence on promoting resilience. In the longer-term, this approach could move the conversation on resilience forward by promoting empirical testing of theoretical measurement frameworks, encouraging participatory feedback and mixed-methods data collection, and promoting the benefits of iterative processes and ongoing reflections on lessons learned.

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